

<110> The Government of the United States of America, et al.

<120> Recombinant Multivalent Malarial Vaccine Against *Plasmodium Falciparum*

<130> 03063-0440WP

<140>

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<160> 26

<170> PatentIn Ver. 2.0

<210> 1

<211> 1053

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: recombinant
dna/protein

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<221> CDS

<222> (1)..(1053)

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tct tac atc tat gcg gat cat cat cat cat cat aaa cat aaa aaa 96
Ser Tyr Ile Tyr Ala Asp His His His His His Lys His Lys Lys
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tta aag caa cca ggg gat ggt aat cct tgg tcc cca tgt agt gta act 144
Leu Lys Gln Pro Gly Asp Gly Asn Pro Trp Ser Pro Cys Ser Val Thr
35 40 45

tgt gga aaa cct aaa gac gaa tta gat tat gaa aat gat att gaa aaa 192
Cys Gly Lys Pro Lys Asp Glu Leu Asp Tyr Glu Asn Asp Ile Glu Lys
50 55 60

aaa att tgt aaa atg gaa aaa tgt tcc agt gtg ttt aat gtc gta aat 240
Lys Ile Cys Lys Met Glu Lys Cys Ser Ser Val Phe Asn Val Val Asn
65 70 75 80

agt aat tct gga tgt ttc aga cat tta gat gaa aga gaa gaa tgt aaa 288
Ser Asn Ser Gly Cys Phe Arg His Leu Asp Glu Arg Glu Glu Cys Lys
85 90 95

tgt tta tta gaa gat tca ggt agc aac gga aag aaa atc aca tgt gaa 336
Cys Leu Leu Glu Asp Ser Gly Ser Asn Gly Lys Lys Ile Thr Cys Glu
100 105 110

tgt act aaa cct gat tct aag cct att gtg caa tat gac aat ttc aat 384

tgt tta tta gaa gat tca ggt agc aac gga aag aaa atc aca tgt gaa	336
Cys Leu Leu Glu Asp Ser Gly Ser Asn Gly Lys Lys Ile Thr Cys Glu	
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tgt act aaa cct gat tct aag cct att gtg caa tat gac aat ttc aat	384
Cys Thr Lys Pro Asp Ser Lys Pro Ile Val Gln Tyr Asp Asn Phe Asn	
115 120 125	
gca aac cca aac gca aac ccc aat gca aat cct gat gga aat tgt gaa	432
Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asp Gly Asn Cys Glu	
130 135 140	
gat ata cca cat gta aat gaa ttt tca gca att gat ctt gga aat gct	480
Asp Ile Pro His Val Asn Glu Phe Ser Ala Ile Asp Leu Gly Asn Ala	
145 150 155 160	
gaa aaa tat gat aaa atg gat gaa cca caa cat tat ggg aaa tca ctc	528
Glu Lys Tyr Asp Lys Met Asp Glu Pro Gln His Tyr Gly Lys Ser Leu	
165 170 175	
act cca tta gaa gaa tta tat aaa cca aat gat aaa agt ttg tat cag	576
Thr Pro Leu Glu Glu Leu Tyr Lys Pro Asn Asp Lys Ser Leu Tyr Gln	
180 185 190	
tat ata aaa gca aat tct aaa ttt ata ggt ata act gaa cta agc aac	624
Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Leu Ser Asn	
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aca ttc ata aac aat gct gga caa cat gga cat atg cat ggt aac gag	672
Thr Phe Ile Asn Asn Ala Gly Gln His Gly His Met His Gly Asn Glu	
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Arg Glu Asp Glu Arg Thr Leu Thr Lys Glu Tyr Glu Asp Ile Val Leu	
225 230 235 240	
aaa gag ttt aca tat atg ata aac ttt gga aga gga cag aat tat tgg	768
Lys Glu Phe Thr Tyr Met Ile Asn Phe Gly Arg Gly Gln Asn Tyr Trp	
245 250 255	
gaa cat cca tat caa aaa agt gat caa cct aaa caa tat gaa caa cat	816
Glu His Pro Tyr Gln Lys Ser Asp Gln Pro Lys Gln Tyr Glu Gln His	
260 265 270	
tta aca gat tat gaa aaa att aaa gaa ggt aag ccc ttg gat aaa ttt	864
Leu Thr Asp Tyr Glu Lys Ile Lys Glu Gly Lys Pro Leu Asp Lys Phe	
275 280 285	
gga aat atc tat gat tat cac tat gag cat tct agt cca tct agt aca	912
Gly Asn Ile Tyr Asp Tyr His Tyr Glu His Ser Ser Pro Ser Ser Thr	
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aag tca tca agt cca tca aat gta aaa tca gct agt cta gct aca aga	960
Lys Ser Ser Ser Pro Ser Asn Val Lys Ser Ala Ser Leu Ala Thr Arg	
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tta atg aaa aaa ttt aaa gct gaa atc aga gat ttc ttc ggt ata agt	1008
Leu Met Lys Lys Phe Lys Ala Glu Ile Arg Asp Phe Phe Gly Ile Ser	

325

330

335

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Leu Lys Gln Pro Gly Asp Gly Asn Pro Trp Ser Pro Cys Ser Val Thr
 35 40 45

Cys Gly Lys Pro Lys Asp Glu Leu Asp Tyr Glu Asn Asp Ile Glu Lys
 50 55 60

Lys Ile Cys Lys Met Glu Lys Cys Ser Ser Val Phe Asn Val Val Asn
 65 70 75 80

Ser Asn Ser Gly Cys Phe Arg His Leu Asp Glu Arg Glu Glu Cys Lys
 85 90 95

Cys Leu Leu Glu Asp Ser Gly Ser Asn Gly Lys Lys Ile Thr Cys Glu
 100 105 110

Cys Thr Lys Pro Asp Ser Lys Pro Ile Val Gln Tyr Asp Asn Phe Asn
 115 120 125

Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asp Gly Asn Cys Glu
 130 135 140

Asp Ile Pro His Val Asn Glu Phe Ser Ala Ile Asp Leu Gly Asn Ala
 145 150 155 160

Glu Lys Tyr Asp Lys Met Asp Glu Pro Gln His Tyr Gly Lys Ser Leu
 165 170 175

Thr Pro Leu Glu Glu Leu Tyr Lys Pro Asn Asp Lys Ser Leu Tyr Gln
 180 185 190

Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Leu Ser Asn
 195 200 205

Thr Phe Ile Asn Asn Ala Gly Gln His Gly His Met His Gly Asn Glu
 210 215 220

Arg Glu Asp Glu Arg Thr Leu Thr Lys Glu Tyr Glu Asp Ile Val Leu
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Lys Pro Asn Asp Lys Ser Leu Tyr
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Leu Leu

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Pro Asp Ser

<210> 13
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<400> 13
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Glu

<210> 14
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Ser Asn Thr Phe Ile Asn Asn Ala
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<210> 16
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Asp Leu

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Lys Ser

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Lys Glu Gly

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Phe

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Ser Tyr Ile Tyr Ala Asp
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